Module 3: Hazardous Materials and Terrorist Incidents
Lesson 3-1: Introduction to Special Situations

Module Overview

Welcome to Module 3: Hazardous Materials and Terrorist Incidents.

Hazardous materials and terrorist incidents are two special situations that you may encounter as a CERT member. Both scenarios have unique dangers associated with them; to best protect yourself and others, you need to be aware of these perils.

In this module, you'll learn about the special dangers associated with hazardous materials and terrorist incidents, and you'll learn about the CERT protocol that you must follow to help keep everyone safe.

You'll also see how hazardous materials and terrorist incidents often come hand in hand.

It should take you about **1 hour 5 minutes** to complete the three lessons in this module:

- Lesson 3-1: Introduction to Special Situations — **15 minutes**
- Lesson 3-2: Hazardous Materials Safety — **20 minutes**
- Lesson 3-3: Terrorism and CERT — **30 minutes**

After completing this module, you should be able to:

- Identify practices that CERTs must follow in situations that involve hazardous materials or terrorism

Lesson Overview

Welcome to Lesson 3-1: Introduction to Special Situations.

In this lesson, you'll learn about the types of situations that may involve hazardous materials or terrorism and the procedures that CERTs follow in such situations.

After completing this lesson, you should be able to:

- Identify special situations as incidents involving hazardous materials and/or terrorism

- Identify practices that CERTs must follow for hazardous materials and terrorist incidents

It should take you about **15 minutes** to complete this lesson.

Hazardous Materials Defined

First of all, it's important to know what hazardous materials are. They're part of our daily lives and can often be found in the home, in the workplace, in other commercial locations, and on the highway.

It can be difficult to remember how risky some of these materials are, because we're in daily contact with them. But when they're mishandled, these materials can be very dangerous to us, our property, and our environment.

Hazardous materials are materials that:

- Corrode other materials
- Explode or are easily ignited
- React strongly with water
- Are unstable when exposed to heat or shock
- Are toxic to humans, animals, or the environment

How Are Terrorism and Hazardous Materials Related?

Simply put, terrorism and hazardous materials are related because most terrorist acts involve some kind of hazardous material.

All weapons of mass destruction (WMD) are hazardous materials. They might include:

- Chemical agents
- Biological agents
- Radiological and nuclear materials
- Explosives

We'll return to terrorist incidents later in the module.

CERT Special Situation Response

Despite what you'll learn in the classroom *for CERT Basic Training*, you won't have enough training to respond to situations that involve hazardous materials.

In fact, CERT members are never asked to respond to any incidents involving hazardous materials. Safety is always the first priority in these situations, and it requires extensive training and special equipment to contain, clean up, and dispose of hazardous materials.

Knowledge Review

What are some characteristics of hazardous materials? Select all that apply.

A. They can be safely disposed of in rivers and streams
B. If spilled, they can be cleaned up by trained CERT members.
C. They corrode other materials.
D. They may explode or combust easily.
E. They are toxic to humans and animals.

Answer:
C, D, E

Reacting to Special Situations

How should you deal with situations that involve hazardous materials?

You should treat all known and suspected hazardous materials as STOP signs — in other words, do not attempt to respond under any circumstances.

Instead, complete your evaluation of the situation from a safe distance:

- Don't touch anything
- Position yourself uphill and upwind from the incident
- Warn others to stay away from the area

After evaluating the situation, what should you do next?

Informing Emergency Responders

Once you are safe, you should call 911!

Knowledge Review

When calling 911, what sort of information do you think you should provide to the operator? Write your answers below and compare to the answers given.

_____
_____
_____
_____
_____

Answer:
Provide as much information as you can about:

- What appears to have happened
- Where it happened
- What is happening now
- The number and types of known injuries
- Who you are
- Where you are
- How you can be reached

Knowledge Review

A tanker truck has crashed and spilled an unknown hazardous material across the highway. Where should you go to safely call 911?

A. Inside your car, with the doors shut and the windows rolled up.
B. The nearest highway exit
C. Uphill and upwind from the spill
D. The cabin of the overturned truck, after checking the driver for injuries

Answer:
C

Knowledge Review

Chemical or radiological materials are especially hazardous to people in the immediate vicinity, because these materials easily contaminate clothes and skin and can cause permanent damage.

If you find that you have been exposed to these materials, what should you do?

A. Douse yourself with the nearest source of water, and then blot dry.
B. Call 911 immediately to inform emergency responders of the location and nature of the disaster.
C. Leave the contaminated area immediately, get upwind and uphill from the hazard, and wait for professional responders.
D. Run uphill and upwind, and tell everyone else in the area to do the same.

Answer:
C

Contamination

While you wait for professional responders, you can use some basic decontamination procedures:

- Remove everything, including jewelry.
- Cut off any clothing that is usually removed over the head.
- Wash your hands, using any source of available cool water and soap.
- Flush your entire body with cool water.
- Blot yourself dry; do not rub.
- Put on clean clothes if available.
- Wait in safe area for professional responders to arrive.

Now that you have reduced your own risk of injury, how can you help the rest of the people affected by the disaster?

Helping Others

Never attempt to treat victims inside the contamination zone. The best thing you can do for other people is to tell them to **leave the area**.

Once the area has been evacuated, explain the basic decontamination process and caution victims to wait for responders who will perform a thorough decontamination.

Remember that your personal safety is **always** the first priority during a hazardous materials or terrorist incident. Without the special training and equipment required to respond to these situations, the most helpful thing you can do is avoid becoming a victim yourself.

You'll learn more about procedures following a chemical release in Lesson 3 of this module.

Knowledge Review

Now that you've gone through this introduction to special situations, let's see what you remember!

Use your knowledge of hazardous materials and terrorist incidents to pick out which of the following statements are true and which are false.

1.	T	F	CERT members are qualified to respond to terrorist incidents after completing this training and the classroom training.
2.	T	F	During situations that involve hazardous materials, your own safety is your first priority.
3.	T	F	Weapons of mass destruction (WMD) are all hazardous materials.
4.	T	F	Immediately treat anyone exposed to a chemical or biological threat and stay close to others in the impacted area.

Answer:

1. F
2. T
3. T
4. F

Lesson Summary

In this lesson, you learned the basics about special situations.

Key points covered in this lesson include:

- Treat hazardous materials as STOP signs: Only professional responders with special equipment are trained to deal with these situations.
- If you become contaminated, use standard decontamination procedures and then wait for responders to perform complete decontamination.

You've completed this lesson. You're now ready to begin Lesson 3-2: Hazardous Materials Safety.

Module 3: Hazardous Materials and Terrorist Incidents
Lesson 3-2: Hazardous Materials Safety

Lesson Overview

Welcome to Lesson 3-2: Hazardous Materials Safety.

In this lesson, you'll learn about common hazardous materials, their properties, and their potential dangers. You'll also learn how to safely use and store these materials in your home.

After completing this lesson, you should be able to:

- Identify means you can use to determine if hazardous materials are present
- Identify what CERT members should do in situations involving hazardous materials

It should take about **20 minutes** to complete this lesson.

Knowledge Review

Chemicals are part of our daily lives. We use them to clean our homes and to fix machinery, and we store them in our homes. Chemicals are used and/or stored in many locations in every community.

In fact, we're so used to having chemicals around that we sometimes forget how dangerous they can be. Chemicals pose a health and environmental threat when mixed, spilled, or used improperly. It's important to handle, store, and dispose of them safely. Can you think of any potentially hazardous chemicals you have in your home? Write your answers below and compare to the answers given.

_____
_____
_____
_____
_____

Answer:
Common household chemicals may include:

- Bleach
- Ammonia
- Acid (drain cleaner, batteries)

- Antifreeze
- Chlorine
- Disinfectants
- Detergents
- Alkaline products (oven cleaner, batteries)

Preventing Disaster

Products containing hazardous materials can be found in nearly every home (such as the hairspray bottle in the image at right). These products can be dangerous. But most chemical accidents are preventable if you simply take the time to read product labels and learn how to use the products correctly.

However, if an accident does happen, you need to know what to do. By immediately taking the appropriate action during a hazardous materials emergency, you can reduce the risk of injury.

Responding to Disaster

When CERT members respond to a disaster, their assessment must determine whether hazardous materials are present and what type of danger the materials pose. But everyone should know the basic steps to take if there's a hazardous materials emergency at home or work.

As we discussed in the previous lesson, materials are considered hazardous if they:

- Corrode other materials
- Explode or are easily ignited
- React strongly with water
- Are unstable when exposed to heat or shock
- Are toxic to humans, animals, or the environment

What should you do if you suspect or discover that someone has been exposed to hazardous materials?

You should gauge your reaction based on the type of exposure and the type of chemicals involved. Some household hazardous materials are dangerous when they're ingested or absorbed through the skin. Others are harmful only when they're inhaled. This is another good reason to read product labels: Besides explaining how to use a chemical, they describe its possible dangers.

To determine if someone has been exposed, watch his or her symptoms carefully. A victim may have one or several of the following symptoms:

- Difficulty breathing
- Changes in skin color
- Headaches, blurred vision, dizziness
- Cramps or diarrhea
- Clumsiness or lack of coordination
- Irritation of the eyes, skin, throat, or respiratory tract

Knowledge Review

Let's see what you already know. Review the following actions involving hazardous materials. Which do you think would be considered safe practices? Which would be considered unsafe?

1. Safe Unsafe You notice the smell of gas coming from the kitchen. You leave the house and move your family to a neighbor's house, where you can call for help.
2. Safe Unsafe To do your part for the environment, you always save old containers. You use them to store household cleaning solutions.
3. Safe Unsafe The carbon monoxide detector in your home goes off. You leave the house and move your family to the nearest upwind, uphill location.
4. Safe Unsafe You keep a candle lit as you clean the kitchen because the smell of the chemicals is too strong.

Answer:

1. Safe
2. Unsafe
3. Safe
4. Unsafe

If an Emergency Occurs

If you determine that someone has been exposed to a chemical, there are three possible courses of action you can take. Each depends on the type of exposure and the type of chemical involved.

If a poison is ingested find the original container and call the poison control center (800-222-1222) immediately. Follow the directions you are given.

If a chemical gets into the eyes flush with water for at least 15 minutes. If possible, have someone else call 911.

If there is danger of fire or explosion get out of the building immediately. When you are safely outside and away from danger, call the fire department. Remain uphill and upwind from the building.

Protect Yourself!

There are also many steps you can take to **prevent** hazardous materials accidents before they happen. Recall from Module 2: Fire Safety that you can use a simple acronym to protect yourself in your home: LIES

The LIES practices will help keep you and your family safe:

- **L**imit the amount of hazardous materials that you have stored.
- **I**solate products in approved containers, and protect them from sources of ignition.
- **E**liminate products that are no longer necessary by disposing of them properly.
- **S**eparate incompatible materials.

What other ways can you think of to avoid hazardous material emergencies?

Knowledge Review

The following statements concern appropriate actions related to hazardous material situations. Based on the safety measures we've covered so far, decide which statements are true and which are false.

1. T F If there is danger that a household chemical may catch fire or explode, you should clean it up quickly.
2. T F If you suspect that a child has ingested a chemical, you should administer milk of magnesia to help him or her expel it.
3. T F If a chemical enters your eyes, you should immediately flush them with water.
4. T F Chemicals must be kept away from any heat source or open lame.

Answer:

1. F
2. F
3. T
4. T

Natural Gas and Carbon Monoxide Hazards

If you use natural gas in your home for cooking and heating, you should be aware of its hazards and be aware of potential leaks.

Gas companies often add an odor to gas to alert you when there is a leak. It usually smells like rotten eggs. Other signs to alert you to a leak are blowing dirt or dust, bubbles forming in a glass of water, and a hissing or whistling noise.

There is no device that will detect a natural gas leak. However, there are devices that will alert you to another potential risk: carbon monoxide (CO) poisoning. CO is produced by the incomplete burning of solid, liquid, and gaseous fuels. CO is colorless, tasteless, and odorless. You can install a carbon monoxide detector that will let you know if you are at risk of CO poisoning.

Identifying Hazardous Materials in Storage

Hazardous materials are stored in many places throughout your community. You may find them in production facilities, storage tanks, warehouses, schools, office buildings, places of worship, and many retailers such as supermarkets and hardware stores.

To identify locations where significant quantities of hazardous materials are used or stored and inform people about the materials they contain, the National Fire Protection Association (NFPA) developed the NFPA 704 Diamond.

The NFPA 704 Diamond

The NFPA 704 Diamond is divided into four colored quadrants that provide information about the material stored inside the given facility. These quadrants create a standard system for identifying hazards.

Each color in the diamond represents a specific type of hazard:

- Blue represents a health hazard.
- Red represents flammability.

- Yellow represents reactivity.
- White provides information about special precautions.

There's a number in each of the colored quadrants of the NFPA 704 Diamond. These numbers always range from 1 to 4 and represent the degree of danger that is associated with the stored material.

The higher the number, the higher the risk!

But what about the white quadrant?

The White Quadrant

The white quadrant of the diamond uses a symbol instead of a number to convey information.

These different symbols represent different types of hazards:

- W indicates a material that shows unusual reactivity with water
- OX indicates a material that reacts violently with oxygen

Magnesium is one example of a material that would be indicated by a white quadrant W. Ammonium nitrate is an example of a substance that would be indicated by an OX.

Next, we'll talk about what you should do when you see an NFPA 704 Diamond.

Encountering a Diamond

The NFPA 704 Diamond is placed on placards to indicate hazardous materials inside a location, something that can be pretty scary after a disaster. Chemicals may have spilled or leaked, presenting a danger to people in the vicinity.

So what do CERT members do when they encounter one of these placards and they see or smell signs that the hazardous materials may no longer be properly contained?

CERT members should consider the NFPA 704 Diamond placard a **stop sign.**

In fact, in the immediate aftermath of a disaster, the **only** action CERT members should take when a facility is labeled with an NFPA Diamond and there are signs

that hazardous materials are leaking is to warn people of the danger and evacuate them to an upwind and uphill location.

You'll learn more about how to recognize the signs of large-scale hazardous material emergencies in the classroom-based *CERT Basic Training* course.

Knowledge Review

1. T F The blue quadrant represents special precautions.
2. T F The red quadrant represents reactivity.
3. T F The yellow quadrant represents reactivity.
4. T F The blue quadrant represents health hazards.

Answer:

1. F
2. F
3. T
4. T

Identifying Hazardous Materials in Transit

The NFPA placard identifies hazardous materials in fixed locations. The U.S. Department of Transportation (DOT) has developed a placard system of its own to identify hazardous materials in transit.

DOT placards:

- Use a combination of colors, symbols, and numbers
- Indicate hazardous materials being carried in the placarded vehicle or railcar

The DOT placard system:

Name	Color
1.1 Explosives	Orange
2 Flammable Gas	Red
2 Inhalation Hazard	White
3 Flammable	Red
4 Flammable Solid	Red and White
4 Spontaneously Combustible	Red and White
4 Dangerous When Wet	Blue

5.1 Oxidizer	Yellow
6 Poison	White
7 Radioactive	Yellow and White
8 Corrosive	Black and White

This system is just one of three placard systems that you may encounter.

Placard Systems

The DOT placard system is the most commonly used in the United States, but there are two other placard systems that you might see occasionally:

- The United Nations (UN) system, which is used internationally as well as in the United States
- The North American (NA) system, which is currently being phased out but is still sometimes used on shipments from Canada

Protect Yourself

Use extreme caution when you are near any vehicle accident, because DOT placards are not foolproof.

- They are required only for more than 1,001 pounds of hazardous materials — meaning that, even if the vehicle does not have a placard, it may still be extremely dangerous!
- Sometimes drivers forget to change the placard when they change their cargo, resulting in falsely marked or absent placards.

Knowledge Review

Name three placarding systems that you may encounter in the United States.

_____
_____
_____
_____
_____

Answer:
Common placarding systems in the US include:

- NFPA 704 diamond
- Department of Transportation (DOT) Placard System
- United Nations (UN) System
- North American (NA) System

Explaining the DOT Placard

The top, middle, and bottom sections of a DOT placard each contain important information.

- The **top portion** of the placard contains a symbol representing the hazard that is associated with the material. In this case, the symbol indicates that fire is a hazard.
- The **middle portion** of the placard often contains text that provides a hazard description for the material. In this case, it indicates that the material is an oxidizer (a chemical that supplies its own oxygen and helps other combustible material burn more readily).
- In many cases, the **bottom portion** of the placard contains a number that identifies the DOT hazard class that applies to the material.

Hazardous Materials Scenario

The Harper family – Paul, Elisabeth, Claire, and Allie – spent the afternoon playing Frisbee in their yard and are now heading back inside to do some chores around the house. As they do simple tasks such as cooking, paying bills, and cleaning, they may come in contact with hazardous materials. You can help them make smart decisions by answering some questions about their activities and actions.

Scenario Question 1

Paul is in the kitchen cooking while Allie plays on the floor nearby. There are several potential hazards in the room. Which of the following are potential chemical hazards Paul should be aware of?

A. Open cabinet under sink containing cleaning supplies
B. Cleaning supplies on counter beside stove
C. Cleaning product containers in trash can
D. Spilled cleaning product on counter

Answer:
A, B, C, D

Scenario Question 2

As Allie plays on the floor, a cabinet full of cleaning supplies is close by. Looking more closely at the chemicals in the cabinet, you can see that Allie could easily get into them. What is the proper way to store these chemicals?

A. All together in a locked cabinet
B. Outside of the home, in a shed or garage
C. According to individual labels

Answer:
C

Scenario Question 3

Paul has set this cleaner by the stove. Is this a hazard?

A. Yes
B. No

Answer:
A

Scenario Question 4

Paul has thrown this container in the trash can. Do you think this is disposed of properly?

A. Yes, if they are safe enough to keep in the house, you can throw them out with everything else.
B. No, you should never throw containers away in regular garbage.
C. I'm not sure, I would need more information to make a decision.

Answer:
C

Scenario Question 5

Paul has accidentally spilled a chemical on the counter. Without knowing what this chemical is, what should you do with the spill?

A. Leave it, the damage has been done.
B. Clean it with the rag immediately.
C. Leave the building.

Answer:
B

Scenario Question 6

While Paul and Allie are in the kitchen, Elisabeth is in the basement paying bills. As she works, she thinks she smells gas. An odor is often the first thing people notice in a gas leak. In addition to an odor, what are other signs of a gas leak?

A. Visible white cloud
B. Cold furnace
C. Blowing dirt or dust
D. Hissing or whistling noise
E. Sparks coming from radiator
F. Bubbles forming in a glass of water

Answer:
C, D, and F

Scenario Question 7

If the gas odor is strong, like rotten eggs, it may be a serious leak. If it's a serious leak, what should Elisabeth do first?

A. Open the windows.
B. Turn off the gas.
C. Gather her family and leave.
D. Call for help.

Answer:
C

Scenario Question 8

Because of the strong odor, Elisabeth and her family are leaving the house. As they are leaving, Elisabeth realizes that several appliances are on, as well as the overhead lights. What should she do?

A. Turn off everything.
B. Leave them on.
C. Turn off the appliances, but leave on the lights on.

Answer:
B

Scenario Question 9

But what if the odor is only faint? If Elisabeth realizes that the smell is not strong, then she knows there is no need to leave the house or call for help. Is this true or false?

A. True
B. False

Answer:
B

Scenario Question 10

When the odor is faint, there are still certain things to be done. What steps should Elisabeth take to ensure the safety of herself and her family? Put the steps in the correct order.

___ Call the utility company and emergency responders.
___ Leave the house.
___ Open all doors and windows.
___ Gather family members and pets.
___ Shut off the gas supply, if she knows how.

Answer:
5, 4, 1, 3, 2

Preventing a Leak

Whether the gas odor is strong or faint, there are things Elisabeth can do to prevent a gas leak and keep her family safe.

There is no device that will detect a natural gas leak. So you should always be aware of the signs of a gas leak you have learned. By doing so, you can prevent gas leaks from harming your family.

There are devices that will alert you to another risk: carbon monoxide (CO) poisoning.

CO is produced by the incomplete burning of solid, liquid, and gaseous fuels. CO is colorless, tasteless, and odorless. You can install a carbon monoxide detector that will let you know if you are at risk of CO poisoning.

Scenario Question 11

While her parents are working downstairs, Claire is upstairs getting ready to clean the bathroom. What three things should she do first?

A. Turn on fan.
B. Open all cleaning supplies.
C. Put on gloves.
D. Read product labels.

Answer:
A, C, D

Scenario Question 12

Claire is in the middle of cleaning when she realizes she's almost out of toilet bowl cleaner. She has a full container of the cleaning chemical she uses on the bathtub. She decides just to mix the remaining toilet bowl cleaner with some of the bathtub cleaner. Which of the following would you advise Claire to do?

A. She should mix the two products only if it will create a stronger product.
B. Since the bathtub cleaner contains less than 5% ammonia, according to the label, she can mix it with anything.
C. As long as there is ventilation, she is safe to mix the products.
D. She should avoid mixing cleaning products.

Answer:
D

Scenario Question 13

Oh no! If there is an accident and Claire gets any of the chemical in her eyes, what should she do?

A. Call 911 and wait for help.
B. Wait 10 minutes to see about possible reaction and then flush with water.
C. Flush with water for at least 15 minutes.
D. Blot eyes with a paper towel to remove cleaner and then flush with water.

Answer:
C

Scenario Question 14

If Claire wants to avoid getting a headache from the fumes, what could she do?

A. Spray air freshener to dispel any fumes.
B. Since the label says the fumes are odorless, she doesn't have to worry about fumes affecting her.
C. Make sure she has proper ventilation, such as the fan or the window.

Answer:
C

Scenario Question 15

Claire checks her watch and realizes that it's almost time for her soccer practice. She looks around the room, and a few things catch her eye. Which of the following items could create a hazard if Claire doesn't deal with them before she leaves?

A. A bucket of water sitting on the floor
B. Dirty rags in the sink
C. Empty container in the trash
D. The ventilation fan
E. An open container by the sink

Answer:
A, B, and E

Lesson Summary

In this lesson, you learned about actions that you can take to minimize hazardous material incidents.

Key points covered in this lesson include:

- Taking the time to read product labels can reduce the chances of an accident.
- In cases of a hazardous materials emergency, you need to evaluate the type of exposure and type of chemical involved before taking action.
- The NFPA placard system is an important way to identify fixed locations where hazardous materials are used or stored.
- The DOT placard system is an important way to recognize vehicles or containers that carry hazardous materials in transit.

You've completed this lesson. You're now ready to begin Lesson 3-3: Terrorism and CERT.

Module 3: Hazardous Materials and Terrorist Incidents
Lesson 3-3: Terrorism and CERT

Lesson Overview

Welcome to Lesson 3-3: Terrorism and CERT.

In this lesson, you'll learn about the many forms of terrorism and steps you can take to protect yourself and others.

After completing this lesson, you should be able to:

- Define *terrorism* and *weapons of mass destruction (WMD)*
- Identify actions you should take to prepare for and respond to a possible terrorist attack

It should take about **30 minutes** to complete this lesson.

Defining Terrorism and WMDs

Terrorism is defined as violence against civilians to further political or social objectives. Modern terrorist incidents often involve weapons of mass destruction (WMD). As you may recall from Lesson 3-1, all **weapons of mass destruction** are defined as hazardous materials.

You should be aware of these possible WMDs, and the steps needed to prepare for and protect yourself and your family from terrorist threats. Planning for a potential terrorist threat is actually a lot like planning for a natural disaster.

Terrorism preparedness requires you to:

- **Keep informed** about the terrorist threat and what you can do to protect yourself
- **Make a plan** that includes how you will communicate with family members
- **Assemble a disaster supply kit** that includes water and other items

Keeping Informed

Take the time to learn about the different types of WMDs. You need to understand the dangers because during a terrorist incident every second counts. Your life and the lives of your family may depend on knowing:

- The risks posed by the weapons that terrorists are most likely to use
- How to address each type of risk

The following pages provide more information about the types of terrorist threats and how you should respond.

Knowledge Review

Which of the following might be an example of a weapon of mass destruction (WMD)? Select all that apply. Remember, there are many different types of WMDs.

A. Sarin gas
B. Chlorine gas
C. Radioactive iodine
D. The Ebola virus
E. A nuclear blast
F. Agent Orange

Answer:
All of the above

Biological Threats

A biological terrorist attack involves the deliberate release of germs or other biological substances that will make people sick. There are many types of biological agents that could be used for this kind of attack, and not all of them cause contagious diseases.

Anthrax is one example of a noncontagious agent. The smallpox virus, however, is highly contagious and can be spread by person-to-person transmission. Every biological agent is spread in its own way. Some must be ingested, others are inhaled, and still others are absorbed through the skin.

Biological threats are sometimes very difficult to detect. The most likely way that a biological attack will be noticed is through an emerging pattern of unusual illness. Health care workers will report this pattern, and you will be informed through an emergency radio or television broadcast. If your community has established a special system, you may get a telephone call or a personal notice from emergency response workers.

The public officials who inform you of the attack may not be able to tell you immediately what to do to protect yourself. It takes time to determine exactly what

sort of biological threat is present, how it should be treated, and who is most at risk.

So what should you do?

Protect Yourself!

In the event of a biological threat, you should watch the television, listen to the radio, or check the Internet for official news.

Remain alert for information about:

- Demographic: The area or demographic (specific groups) that authorities are concerned about.
- Disease Details: The signs or symptoms of the disease
- Medications or Vaccines: Whether they are being distributed, who should receive them, and where you can obtain them
- Post-Infection Care: Where you can seek emergency medical care if you become sick

If you become aware of an unusual or suspicious release of an unknown substance nearby, don't waste time — protect yourself! Leave the area immediately. Use anything available to cover your mouth and nose with layers of fabric — a T-shirt, handkerchief, towel, or even tissue paper. These will help filter the air while still allowing you to breathe.

As soon as you can, wash yourself with soap and water and contact authorities to inform them of the incident.

Suspicions and Symptoms

If a family member falls ill during a declared biological emergency, it is important for you to keep a close eye on his or her symptoms. You should **not** automatically assume that his or her illness is a result of the biological attack.

Instead, seek medical advice and **pay attention to information provided by local public health or other government agencies.** Make sure to maintain good hygiene to avoid spreading germs.

Now let's discuss procedures for a chemical threat.

Chemical Threats

A chemical attack is the deliberate release of a toxic gas, liquid, or solid that can poison people and the environment.

Always be aware of your surroundings! You can detect the early signs of a chemical threat by remaining alert.

Possible signs of a chemical threat include:

- Many people suffering from watery eyes, twitching, choking, having trouble breathing, or losing coordination
- Several sick or dead birds, fish, or small animals

Protect Yourself!

If you do notice signs of a chemical attack, there are two things you should do:

1. You should quickly try to figure out exactly where the chemical is coming from and what the affected area is.
2. You should then immediately remove yourself from that area.

Exposure can take place indoors or outside. Safely exiting the area of the chemical threat depends on your location:

- If you are inside, attempt to leave the building without passing through the contaminated area. If this is not possible, remove yourself to the farthest possible location in the building and take shelter there. If you are outside, determine the fastest route to escape the chemical threat.
- If you are unable to leave the area, shelter in a location that is uphill and upwind from the threat.

In Case of Exposure

If your eyes are watering or your skin is stinging, and you are having trouble breathing, you may have been exposed to a chemical. After leaving the impacted area, you need to take the necessary precautions to minimize the danger:

- Remove everything, including jewelry
- Cut off any clothing that is usually removed over the head
- Wash your hands first, using any source of available cool water and soap
- Flush your entire body with cool water
- Blot yourself dry; do not rub

- Put on clean clothes if available
- Wait in safe area for professional responders to arrive

Knowledge Review

The following are statements concerning chemical and biological threats. Decide whether each statement is true or false.

1. T F Biological threats can be difficult to detect.
2. T F If you are exposed to a chemical threat, you should immediately scrub yourself with water.
3. T F Biological agents are always extremely contagious.
4. T F Several sick or dead fish may indicate a biological threat.

Answer:

1. T
2. F
3. F
4. T

Radiological Threats

A radiological threat is the use of common explosives to spread radioactive materials over a targeted area. Radiation threats are often referred to as "dirty bombs" or radiological dispersal devices (RDD). Radiation threats are **not** nuclear blasts; the force of the explosion and the radioactive contamination are much more localized.

The destruction left by the explosive will be immediately obvious to any observer, but radiation can be detected only by trained personnel using specialized equipment. While they define the presence of the radiation, you need to try to limit your exposure to it. Can you think of a few ways to do that?

Protect Yourself!

To limit the amount of radiation you are exposed to, there are three key things you need to consider: shielding, distance, and time.

1. Shielding: If you have a thick protective shield between yourself and the radioactive materials, more of the radiation will be absorbed, and you will be exposed to less.
2. Distance: The farther away you are from the blast and the fallout, the lower your exposure will be.
3. Time: Minimizing the time you are exposed will reduce your risk.

Nuclear Blast

A nuclear blast is an explosion that features intense light and heat, a damaging pressure wave, and widespread radioactive material that can contaminate the air, water, and ground surfaces for miles around.

Experts currently predict that a nuclear blast is less likely than other types of terrorist attacks. However, terrorism is by nature unpredictable, and it is good to be prepared for any potential emergency.

What would you do if a nuclear blast occurred?

Protect Yourself!

If there is the threat of a nuclear blast, **take cover immediately.** Go below ground, if possible, but any type of shield or shelter will help to protect you from the immediate effects of the blast and the pressure wave.

After the blast, try to assess the situation. Consider whether you can escape the area or if it would be better to take shelter in a nearby building. As we discussed earlier, you can protect yourself through shielding, distance, and time.

If there is a significant radiation threat, health care authorities may tell you to take potassium iodide. Potassium iodide, which is added to table salt to iodize it, may help protect your thyroid gland, which is particularly vulnerable to radioactive iodine exposure.

Consider keeping extra stores of potassium iodide in your **emergency kit**, which we will discuss later. Speak with your health care provider about the appropriate dosages for each of your family members. Do **not** use potassium iodide except under direction of a medical or public health professional.

Knowledge Review

In the case of a radiological threat or nuclear blast, there are three concepts that will help you to limit the amount of radiation you are exposed to. Name and describe these three things.

_____
_____
_____

Answer:
Three things you can do in case of a radiological threat or nuclear blast are:

- Shielding: If you have a thick protective shield between yourself and the radioactive materials, more of the radiation will be absorbed, and you will be exposed to less.
- Distance: The farther away you are from the blast and the fallout, the lower your exposure will be.
- Time: Minimizing the time you are exposed will reduce your risk.

Explosions

Explosions are another type of terrorist threat. If there is an explosion, quickly take shelter to shield yourself from the force of the blast as much as possible. Try bracing yourself against a sturdy desk or table. If you are inside, exit the building as soon as possible after the blast, because the structure may collapse.

When escaping the scene of the blast, you should:

- Locate your **emergency kit** if time allows
- Avoid elevators, because you may become trapped
- Check for fire and other hazards blocking exit routes

If there is a fire, what would you do?

In Case of Fire

Fire can complicate your escape route. A burning building presents many possible dangers. Do the following things to protect yourself:

- Crawl low if there is smoke in the air.
- Use a wet cloth to cover your nose and mouth.
- Use the back of your hand to feel closed doors. Feel the bottom, middle, and top of the door before opening it.

    - If the door is not hot, open it very slowly to avoid creating a vacuum for the fire.
    - If the door is hot, do NOT open it. Look for another way out.
- Use the stairs, never an elevator.
- Stop, drop, and roll if you catch fire.
- Never go back into a burning building.

Make a plan with family members in the event of a fire. As we will discuss later in this lesson, planning is an important part of safety. If a fire occurs while you are at home, account for all family members and carefully supervise small children.

Debris

An explosion in a building will generate a lot of falling debris. The structure of the building is weakened and can collapse easily — possibly on top of you.

If this happens and you're trapped by debris, there are some things you can do to protect yourself and help your rescuers find you. Don't yell for help unless it is absolutely necessary. Yelling will cause you to inhale a lot of dust and smoke. If possible:

- Signal Your Location: Use a flashlight or whistle to signal where you are.
- Avoid Unnecessary Movement: Moving excessively could kick up dust that will choke you.
- Make Noise: Tap on any pipes or walls that are within reach. Your rescuers will hear the sound.
- Breathe Through Filters: Cover your nose and mouth with anything available and breathe through the filter it creates.

Make a Plan

Your reaction during a terrorist incident depends a lot on where you are when it happens. Planning ahead will help you prepare for an attack anywhere, anytime. Plan for the possibility of a terrorist incident occurring while you're at home, at work, or on the road.

If you have kids in school, talk to them. Find out the school's emergency procedures, and make sure your kids know what to do in the case of a terrorist attack. They also need to know how to contact you and the rest of the family if something does happen. In other words, you need to make a family plan.

What do you think should be included in your family plan?

Your Family Plan

You and your family might not be together when a disaster strikes. Plan what to do and how to communicate during an emergency. Remember to be patient. Telecommunications might be delayed or destroyed by the disaster, making it difficult to use the phone.

There are a few things to keep in mind while you plan:

- Long-Distance Contacts: Calling long distance may actually be easier than calling across town in the middle of a disaster. Find an out-of-state contact to act as a liaison among separated family members.
- Emergency Numbers: Make copies of all your emergency phone contacts and give them to all your family members.
- Means of Communication: If your family doesn't have cell phones, make sure everyone has a pre-paid phone card to call the emergency contact.

Emergency Information

Information is really important during and before a disaster. Find out what kind of disasters — both natural and manmade — are most likely to occur in your area. Find out how you will be informed of them, and where to get that information.

Different communities have different ways of spreading information, but most will use emergency broadcasts on the radio or television to get through to their citizens. Emergency alerts also sometimes include special sirens, door-to-door warnings, or individual telephone calls.

Call your local fire department, emergency management agency, or Red Cross chapter for emergency information that applies to your community.

Emergency Plans

Remember what we talked about earlier — your kids and their school's emergency plan? The same applies to daycare and other after-school activities, as well as your own work or office. Every location should have an emergency plan.

If none exists, volunteer to help create one. Talk to neighbors, co-workers, teachers, and daycare providers about how you can all work together in the event of an emergency. You'll be much better prepared to reunite with your family and loved ones if you plan ahead for a disaster.

Evacuate or Shelter in Place?

You never know whether you will need to evacuate or shelter in place during a terrorist attack. Anything could happen, so you must plan for everything. To find out what you should do, monitor the Emergency Alert System (EAS) broadcasts on local television channels or radio stations. Listen carefully and do exactly as you are directed.

Evacuate: *Evacuate only after assessing the situation outside! Do not evacuate if you see a lot of dust and debris.*

Shelter in Place: *Always shelter in place during a radioactive threat or nuclear blast.*

Knowledge Review

Different communities have different ways of spreading information. Who can you call to find out what sort of emergency information system your community uses?

A. The local television or radio station
B. The local Red Cross chapter
C. The local fire department or local emergency management agency
D. Your Neighborhood watch team chair

Answer:
B and C

Shelter in Place

To shelter in place, you need to:

- Bring your family and pets inside
- Close windows, air vents, and fireplace dampers; lock doors
- Turn off fans, air conditioning, and forced-air heating systems
- Take your emergency supply kit, unless you think it has been contaminated
- Go to an interior room with few or no windows
- Seal all windows, doors, and air vents in the interior room with plastic sheeting and duct tape
    - Measure and cut the sheeting in advance to save time
    - Be prepared to improvise and use what is on hand to seal gaps

Remember, sheltering in place is a **temporary** situation. It helps you survive temporary contamination. Listen to radio, television, and Internet news broadcasts, and stay put until local authorities advise that it is safe to leave your shelter.

Evacuate

When you are ordered to leave or decide that it is better to evacuate than to shelter in place, it helps to have an evacuation plan in mind. Plan where you'll assemble your family, and where you'll all go in case of a disaster. Make sure to choose many possible destinations so you have options.

To plan a successful evacuation:

- Plan meeting places for your family both inside and outside the neighborhood.
- Keep your car's gas tank half full at all times.
- Be familiar with alternate routes and methods of transportation out of your area.
- Be prepared to take your emergency supply kit with you.
- Always lock the door behind you.

Can you think of anything else that should be included in your plan?

Making a Plan

There are a few other things you can do when planning for or participating in a disaster evacuation.

Communicate
Communication is a very important part of your evacuation process.

- Call or e-mail the out-of-state contact in your family communications plan, and tell him or her where you are going.
- Leave a note inside your house telling others what time you left and where you are going.

Check to see if neighbors need a ride.

Turn Off Utilities
Knowing how and when to turn off utilities is also important.

- Remember: If you turn off the gas, a professional must turn it back on. Never attempt to do it by yourself.

- Locate the electric, gas, and water shutoff valves, and keep the necessary tools near gas and water shutoff valves.

Teach family members how to turn off utilities, and always turn off utilities if there is damage to your home or if authorities instruct you to.

Making a Plan for Pets

Pets need shelter, too. You shouldn't leave your pets behind when you're evacuating, but shelters usually are restricted to service animals. That means it's important to plan ahead and decide how your pets will be cared for in an emergency. Always store extra food, water, and supplies for your pet.

Make a Kit

We've already talked about making a supply kit for some of the disasters that may happen in your neighborhood. But the kit we prepared earlier doesn't have all of the supplies you need to get you through a terrorist incident.

In Module 1, Lesson 2, we discussed disaster supply kits. A good supply kit requires water, food, some basic supplies (such as whistles, flashlights and extra batteries, clothing, bedding, tools, a first aid kit, sanitation materials), and important family records (such as insurance policies and bank account information).

You'll need to add supplies to seal off your shelter in the event of a nuclear or radiological attack. Plastic sheeting and duct tape work well for this.

CERT and Terrorism

A terrorist attack is unlikely. However, it is always a possibility. If you observe something unusual or experience any of the symptoms that we discussed, terrorism might be to blame.

Do a complete assessment before you take any action. As we talked about earlier in the lesson, if a WMD has been used, even trained CERT members will be very limited in what they can do to help.

Remember that your own safety is your first priority!

Procedures

As we mentioned, there is very little CERTs can do to help during a WMD-related terrorist incident. Just as with hazardous materials, terrorist incidents should be a STOP sign for CERT members: WMD responses require special training and equipment.

That means that if you see any indications of a WMD, leave the area immediately and call emergency responders. Pay attention to the area as you leave it, because it is considered a crime scene. Report all your observations to the authorities.

Remember that you must never use a cell phone or two-way radio if you suspect that there is an explosive in the vicinity -- you could detonate it! Use a landline instead.

A Recap

Remember from earlier in the lesson that all WMDs are made of hazardous materials. If you think you have been exposed to chemical or radiological agents from a WMD, you need to take immediate action.

As we discussed in the Radiological Threat section and in Lesson 3-2: Hazardous Materials Safety, you must leave the area and use basic decontamination procedures to reduce your risk of injury and to limit your exposure to harmful substances.

Again, personal safety is your first priority. You should take self-protective measures only, and do not attempt to treat victims in the contamination area. Instead, tell people to leave the area. Tell them how to do the basic decontamination procedure, and then tell them to wait for professional responders to perform complete decontamination.

Terrorist Incident Scenario

Natalie is at a train station in a mid-size American city with other commuters. They are all waiting for their trains. A man enters with a duffel bag, sets the bag on the ground, and walks away. As Natalie notices the bag, an announcement is made warning of a suspicious package.

Scenario Question 1

After noticing the bag and hearing the announcement, Natalie needs to take action. What should she do?

A. Use a cell phone to call for help.
B. Stay to help.
C. Exit the station.

Answer:
C

Scenario Question 2

Let's say that Natalie is able to leave the station. Where should she go?

A. She should go home and check on her family.
B. She should get out of the station and move upwind and uphill.
C. She should get out of the station but stay close.

Answer: B

Scenario Question 3

But what if Natalie didn't exit the station? By staying inside, she has put herself at risk of being trapped or harmed by an explosion or fire. If there were a fire, which of the following are appropriate actions to take?

A. Attempt to extinguish the fire if it's small.
B. Stay low to the ground if there's smoke.
C. Use a wet cloth to cover your face.
D. If the door is hot, brace yourself against it and open slowly.
E. If you catch on fire, use the stop, drop, and roll method to put out the flames.
F. Leave immediately, and don't return to the burning building.
G. Use an elevator, as it can rise above the fire.

Answer:
B, C, E, and F

Scenario Question 4

In addition to fire, by staying in the station, Natalie also risks becoming trapped. It may become difficult to escape if you become trapped or injured amid debris. To avoid becoming trapped, assess the area around you and do not hurt yourself or others as you make your way through the affected area.

If you do become trapped, what is the best way to alert rescuers and others to your location in the rubble?

A. Tap on a pipe or wall.
B. Kick up dust in debris.
C. Shout.
D. Use a flashlight to signal.
E. Use a whistle to signal.

Answer:
A, C, and E

Scenario Question 5

In addition to the risks of fire and becoming trapped, by remaining in the building Natalie is also at risk of an explosion.

Which of the following should you do if there is an explosion?

A. Avoid using elevators.
B. Stand in a doorframe for shelter.
C. Immediately exit the building.
D. Use a desk or table for shelter.
E. Avoid escalators.
F. Check for fire or other hazards.
G. Don't use stairwells with windows.

Answer:
A, C, D, F

Scenario Question 6

It appears that the suspicious device also released a chemical agent. Which of the following could be signs of a chemical attack?

A. Irritation of eyes, skin, and throat
B. Sick or dead birds and other small animals
C. Difficulty breathing
D. Loss of coordination
E. Changes in skin color
F. Visible gas cloud
G. Cramps or diarrhea
H. Headaches, blurred vision, and dizziness

Answer:
All of the above

Scenario Question 7

If Natalie sees the signs of a chemical attack, what should she do first?

A. Help others.
B. Follow self-care procedures.
C. Identify impacted area and leave.

Answer:
C

Scenario Question 8

Once she is away from the impacted area, Natalie realizes she was still exposed to the chemical agent and begins to follow self-care procedures. In what order should the following self-care steps occur?

___ Flush body with cool water
___ Report to responders
___ Remove clothing and jewelry
___ Blot dry
___ Cut off clothing instead of removing over heard
___ Put on clean clothes
___ Wash hands

Answer:
4, 7, 1, 5, 2, 6, 3

Scenario Question 9

Once she has left the station and the general area, Natalie shouldn't administer emergency care to those around her. But she should report the attack. What is the best procedure to follow when calling authorities in an emergency such as this?

A. Since it's a terrorist attack, don't call 911. Immediately call the FBI or CIA.
B. Call your family and have them call the authorities.
C. Use a landline in a store or home to call 911.

Answer:
C

Scenario Question 10

Once Natalie calls 911, what should she tell them?

A. Numbers and types of injuries
B. What happened
C. Observations she made about the culprit
D. Where she is and how she can be reached
E. What is happening now
F. Where her family is
G. The route authorities should take

Answer:
A, B, D, and E

Lesson Summary

This lesson discussed how to recognize and respond to terrorist incidents. You learned about the many forms of terrorism and steps you can take to protect yourself and others.

Key points covered in this lesson include:

- Personal safety is always your first priority.
- In the event of a terrorist attack, it is important to stay informed. Monitor television, radio, and Internet news broadcasts to keep on top of the situation.
- Always have a plan of action in case of terrorism. Your plan should include an emergency kit, an evacuation route, and supplies to shelter in place.

Module Summary

In Module 3: Hazardous Materials and Terrorist Incidents, you learned about two of the special situations that CERT members may encounter, and the ways that they protect themselves from the unique dangers presented by hazardous materials and terrorist incidents. These procedures are important for everyone to follow.

Key points included:

- Personal safety is always your first priority.
- Treat hazardous materials as STOP signs. Only professional responders with special equipment are trained to deal with these situations.
- If you become contaminated, use basic decontamination procedures and then wait for responders to perform complete decontamination.
- Taking the time to read product labels can reduce the chances of an accident.
- In cases of a hazardous materials emergency, you need to evaluate the type of exposure and type of chemical involved before taking action.
- The placard system is an important way to identify hazard levels.
- In the event of a terrorist attack, it is important to stay informed. Monitor television, radio, and Internet news broadcasts to keep on top of the situation.
- Always have a plan of action in case of terrorism. Your plan should include an emergency kit, an evacuation route, and supplies to shelter in place.

What's Next?

Now that you've completed this module, you're ready to move on to Module 4: Disaster Medical Operations. In that module, you'll learn how to recognize common injuries for which appropriately trained CERT members may provide basic care, and how to identify public health considerations at disaster sites. You'll also learn why dealing with disaster-related stress is important for both survivors and responders.